KORSHAK, V.V.; FRUNZE, T.M.; VINOGRADOVA, S.V.; KURASHEV, V.V.; [illegible] A.S.

Role of acid chloride hydrolysis of some aliphatic and aromatic dicarboxylic acids in the process of interfacial polycondensation. Izv. AN SSSR.Otd.khim.nauk no.10:1807-1813 O '62. (MIRA 15:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Acids, Organic) (Chlorides) (Hydrolysis)
(Polymerization)

15.8070

41914
S/191/62/000/011/006/019
B101/B186

AUTHORS: Akutin, M. S., Korshak, V. V., Rodivilova, L. A., Vinogradova, S. V., Budnitskiy, Yu. M., Valetskiy, P. M., Lebedeva, A. S.

TITLE: New data on processing and properties of polyarylates

PERIODICAL: Plasticheskiye massy, no. 11, 1962, 20-26

TEXT: This paper deals with experiments for determining the optimum processing conditions of polyarylates from isophthalic acid and diane (ID), terephthalic acid and diane (TD), and the mixed polymer ITD (ratio iso- to terephthalic acid 1:1). Preliminary experiments showed that the interfacial polycondensation in more concentrated solutions than hitherto usual gave polymers with low molecular weight: thus 13.5% by weight of diane in NaOH solution + 15-20% by weight of isophthalic dichloride in methylene chloride yielded a polymer with MW ~18,000. A better result was obtained for ITD in the presence of 1% triethyl benzyl ammonium chloride as catalyst: the reduced viscosity in tricresol was 0.58. Injection-molded products were made from ID, TD, and ITD, and tested. Results:

Card 1/3

S/191/62/000/011/006/019
B101/B186

New data on processing and ...

(1) At 280-360°C, ID and TD can be processed only in inert gas atmosphere since thermal destruction occurs if air is present. ITD can still be processed at these temperatures in the presence of air. (2) The strength of products depends on the molecular weight (or on the reduced viscosity). Adequate tensile strength (~ 400 kg/cm^2) is attained above η_{red} = 1.0. Products with a tensile strength of 850-900 kg/cm^2 were obtained from ITD with η_{red} = 1.9-2.0. (4) The tensile strength drops from 820 kg/cm^2 at 280°C to 480 kg/cm^2 at 340°C. (5) The effect of the molding time becomes manifest the tensile strength dropping from 850 kg/cm^2 after 10 min to 300 kg/cm^2 after 30 min molding time. (6) A change in molding pressure has no effect on the tensile strength. (7) Increasing the temperature of the mold from 80 to 160°C increases the tensile strength from 650 to 820 kg/cm^2, but a further increase (to 200°C) reduces the tensile strength. (8) A study of the chemical stability of injection-molded specimens and films showed: good stability to mineral and organic acids, oxidants, and dilute alkalis; poor stability to concentrated alkalis, particularly ammonia; swelling in some solvents, injection-molded specimens being more stable than films. The chemical stability of polyarylates resembles that of polycarbonates, and is inferior to that of polyethylene terephthalate

Card 2/3

S/191/62/000/011/006/019
B101/B186

New data on processing and ...

only as regards the swelling in some organic solvents. There are 8 figures and 6 tables.

Card 3/3

KNYAZEVA, T.S.; KORSHAK, V.V.; AKUTIN, M.S.; KULEVA, M.M.; VINOGRADOVA, S.V.; RODIVILOVA, L.A.; NEDOPEKINA, T.P.; VALETSKIY, P.M.; MOROZOVA, S.A.; SALAZKIN, S.N.

Possibility of using various polyarylates as insulating film materials. Plast. massy no.12:37-40 '62. (MIRA 16:1)
(Acids, Organic) (Polymers) (Insulating materials)

34982
S/190/62/004/003/002/023
B110/B144

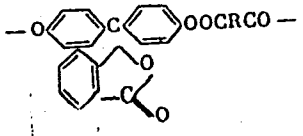
15.8110

AUTHORS: Korshak, V. V., V[illegible]gradova, S. V., Salazkin, S. N.

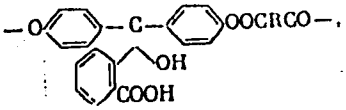
TITLE: Heterochain polyesters. XXXIII. Polyarylates on phenolphthalein base

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 3, 1962, 339-344

TEXT: Homogeneous and mixed polyarylates (I) on phenolphthalein base were synthesized, and the effect of the initial compound structure on their properties was examined. The authors hoped to obtain a polymer which would be well soluble by virtue of the large phenolphthalein side groups and which would have a sufficiently high softening temperature owing to the polar group in the side group. The lactone group was to be modified to reactive carboxyl and hydroxyl groups as follows:



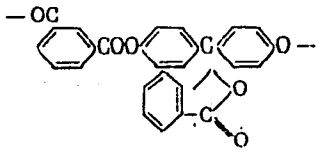
into

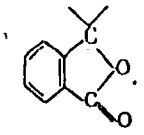


Card 1/3

Heterochain polyesters...

The properties of I are dependent on the structure of the initial components. I of terephthalic acid show the highest softening temperatures, followed by I of isophthalic, adipic, and sebacic acid. Substituting "dian" or resorcin for half the phenolphthalein in I lowers the softening temperature. A softening temperature rise is probably due to the increase of chain interaction caused by the polar groups:





The decrease in packing density raises the solubility of I on phenolphthalein base as compared with I on "dian" base. I on phenolphthalein base and isophthalic acid base dissolves in methylene chloride, chloroform, tetrachloro ethane, tetrahydrofuran, cyclohexanone. The partial substitution of phenolphthalein for bivalent phenols raises solubility. Films obtained from 5 % solutions of I with phenolphthalein and terephthalic acid retain

Card 2/3

> 50 % of their strength at 180°C. Amorphous structure of most of I on phenolphthalein base was established by X-ray structural analysis. Thanks are due to the teams of laboratoriya fiziki polimerov (Laboratory of Polymer Physics) and laboratoriya rentgenostrukturnogo analiza (Laboratory of X-ray Structural Analysis) for thermodynamic and X-ray analyses. There are 3 tables and 17 references: 13 Soviet and 4 non-Soviet. The two references to English-language publications read as follows: A. Conix, Industr. and Engng. Chem., 51, 147, 1959; W. M. Eareckson, J. Polymer Sci., 40, 399, 1959.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR
(Institute of Elemental Organic Compounds AS USSR)

SUBMITTED: April 24, 1961

34983
S/190/62/004/003/003/023
B110/B144

15.8110

AUTHORS: Korshak, V. V., Vinogradova, S. V., Iskenderov, M. A.

TITLE: Heterochain polyesters. XXXIV. Polyesters of aromatic dioxy condensed-ring compounds

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 3, 1962, 345-350

TEXT: Polyarylates were obtained on the base of isomeric diols of the naphthalene, anthracene, and phenanthrene series using interface polyconcentration. The effect of the feeding rate of initial compound solutions, of their concentration and ratio, and of the reaction temperature on yield and molecular weight of polyarylates of 1,6-dioxy naphthalene (I) and dicarboxylic acids (adipic (II), sebacic, and isophthalic (III) acid) was investigated. Best results were achieved by the addition of acid chloride solution to an aqueous alkali solution of I for 11-14 min. The highest polymer yield and viscosity were obtained at 0.10 N concentration of the initial solutions. 20°C was ideal for the interface condensation of 1,6-dioxy naphthalene with II, III, and sebacic acid. If one of the phases is aqueous, various competing reactions may, in polyesterification,

Card 1/3

take place at the interface. Some of them produce a polyester, while others prevent it from forming as, e.g., chain rupture due to hydrolysis of the acid chloride groups and of the initial dicarboxylic acid chloride:

1. $\ldots-OC_{10}H_6OOCRCOCl + H_2O \rightarrow \ldots-OC_{10}H_6OOCRCOOH + HCl$
2. $ClOCRCOCl + 2H_2O \rightarrow HOOCRCOOH + 2HCl$
3. $ClOCRCOCl + H_2O \rightarrow ClOCRCOOH + HCl$

$\ldots-OCRCOOC_{10}H_6ONa + ClOCRCOOH \rightarrow \ldots OCRCOOC_{10}H_6OOCRCOOH + NaCl$

The decrease in viscosity and yield of the polyarylates of I with an increase of the reaction temperature from 20 to 40°C is effected by the increase of the rate of these reactions in the polycondensation process at higher temperatures, while the decrease in viscosity and yield at low temperatures is effected by a drop in the rate of the polymer-forming reaction. Yield and viscosity of polyarylates depend on the different hydrolyzing capacities of the acid chlorides. A 0.2-mole excess of dicarboxylic acid chloride, required as compensation for the acid chloride lost through hydrolysis, provided maximum viscosity (0.22 in polyarylates of III, and 0.16 in those of II) and yield (84 % in III and 35 % in II). Excess of

S/190/62/004/003/003/023
B110/B144

I or of acid chloride (> 0.2 mole) leads to chain rupture by the formation of phenolate or acid chloride groups at the chain terminals. The best NaOH amount is 0.1 mole excess in III and 0.2 mole excess in II. The amount of reactive phenolate of I drops with NaOH deficiency, as I does not react spontaneously. NaOH excess causes the initial acid chloride and the polymer chain to hydrolyze. There are 4 figures, 2 tables, and 16 references: 10 Soviet and 6 non-Soviet. The two references to English-language publications read as follows: A. Conix, Industr. and Engng. Chem., 51, 147, 1959; I. A. Ambler, I. T. Seanlan, Industr. and Engng. Chem., 19, 417, 1927.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR
(Institute of Elemental Organic Compounds AS USSR)

SUBMITTED: February 9, 1961

Card 3/3

VINOGRADOVA, S. V.

4

S/190/62/004/003/013/023
B124/B101

15.9110

AUTHORS: Kovarskaya, B. M., Strizhkova, A. S., Levantovskaya, I. I., Shabadash, A. N., Neyman, M. B., Korshak, V. V., Vinogradova, S. V., Valetskiy, P. M.

TITLE: Study of the thermal degradation of condensation resins. III. Thermal degradation of heterochain polyesters (polyarylates)

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 3, 1962, 433-439

TEXT: Thermal degradation of polyarylates on the basis of 4,4'-dihydroxydiphenyl-2,2'-propane (DDP) and terephthalic (polyarylate TD) or isophthalic (polyarylate ID) acids prepared either in a high-boiling solvent (petroleum ether) (TD(s) and ID(s), respectively) or by interfacial condensation (TD(i) and ID(i), respectively) is studied in this paper. The yield points of the polyarylates were: TD(s) ~340°C; TD(i) ~350°C; ID(s) ~260°C; ID(i) ~270°C). Thermal degradation of the mentioned polymers was investigated between 250 and 525°C. Evolution of gas sets in above 400°C, where 0.26-0.42 mole CO, 0.30-0.60 mole CO_2, and 0.06-0.13 CH_4 per mole of the polyarylate structural unit are liberated. The liquid products of thermal

Card 1/3

S/190/62/004/003/010/023
B124/B101

Study of the thermal ...

degradation of TD(s) performed at 450°C show absorption bands at 1365, 1385 and 2970 cm^{-1} characteristic of the methyl group, and at 1735 and 1250 cm^{-1} characteristic of the ester bond. The split absorption band at 1735 cm^{-1} indicates the presence of terephthalic acid, whereas the split band at 1600 cm^{-1} shows free DDP to be present. The infrared spectrum of the solid residue of TD(s) after thermal degradation at 450°C for 1 hour does not contain bands which are characteristic of methyl groups, whereas bands characteristic of the ester bond are established in the infrared spectrum of the solid residue exposed to thermal degradation at 500°C for 1 hour. These bands are lacking in the spectrum of the product exposed to thermal degradation at 600°C for 20 minutes. Absorption spectra of the solid residue of TD(s) and DDP in the region of 700 - 900 and 1600 cm^{-1} show that the concentration of phenyl rings increases after degradation leading to the formation of polyphenylene-like structures. These conclusions were confirmed by the EMR spectra of the residues of thermal degradation of TD(s) at 450, 500, and 600°C. A. A. Berlin and L. A. Blyumenfel'd Vysokomolek. soyed., 2, 1494, 1960; Zhurnal strukturnoy khimii 1, 103,

Card 2/3

1960) are mentioned. There are 7 figures, 1 table, and 11 references: 9 Soviet and 2 non-Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass (Scientific Research Institute of Plastics)

SUBMITTED: March 4, 1961.

Card 3/3

5/5L00

36237
S/190/62/004/004/003/019
B119/B138

AUTHORS: Korshak, V. V., Vinogradova, S. V., Artemova, V. S.

TITLE: Study of coordination polymers. XI. Rules governing polycoordination in the melt

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 4, 1962, 492-498

TEXT: The polymerization between 4,4'-bis-(acetoacetyl) phenyl ether and beryllium acetoacetate or zinc acetate was studied. The experiments were conducted at 200, 260, and 280°C in nitrogen stream and under vacuum. The mixing ratio of the initial substances was varied. The experiments took 30 min to 19 hr. The relative viscosities of the reaction products were determined. Results: Polycoordination is an equilibrium reaction. The equilibrium of polymer formation can be shifted by eliminating the low-molecular reaction product (acetyl acetone) from the reaction mixture. On the other hand, the polymer is destroyed by heating with acetyl acetone in excess. Be contained in the polymer can be substituted by Cu, (by heating the polymer with Cu acetyl acetonate). The maximum molecular

Card 1/2

Study of coordination polymers. XI. ... S/190/62/004/004/003/019
B119/B138

weight (126,000) was obtained with equimolar amounts of the initial substances. (The mixture was kept for 5 hr at 200°C in N_2 flow and for another 14 hr at 260°C in vacuum (1-2mm Hg)). There are 3 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR
(Institute of Elemental Organic Compounds AS USSR)

SUBMITTED: February 14, 1961

X

Card 2/2

37428
S/190/62/004/005/002/026
B119/B101

15.9110

AUTHORS: Iskenderov, M. A., Korshak, V. V., Vinogradova, S. V.

TITLE: Heterochain polyesters. XXXV. Polyarylates on the basis of 1,6-dihydroxy naphthalene

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 5, 1962, 637 - 641

TEXT: The authors studied the effects of several factors on the yield and on the reduced viscosity of polyarylates prepared by interfacial condensation of 1,6-dihydroxy naphthalene with adipic, sebacic, isophthalic, or terephthalic acid chlorides: (1) of emulsifiers (alkamone A (D), sodium oleate, mersolate, Novost', OP-7, OP-10 (OP-20), Nekal, wetting agent NB (NB), Trilon B, "Kontakt Petrova" and of their concentrations. (0.25 - 2.50%)); (2) of solvents for the acid chloride (benzene, toluene, o-, m-, p-xylene, Tetralin, chloroform, carbon tetrachloride, dichloro ethane, ditolyl methane, n-hexane), of catalysts (triethyl amine, dimethyl aniline, tetraethyl ammonium bromide, zinc chloride, lead oxide, zinc

Card 1/2

acetate) and of their concentrations (0.5 - 3.5%); (3) of the concentrations of the acid chloride solution (0.1 - 1 N). The highest yields (61 - 89%) and values of reduced viscosity (0.20 - 0.32) were obtained by using 1% by weight of emulsifiers with respect to the aqueous phase (OP - 20 for the polyarylates of aliphatic acids and sodium oleate for the polyarylates of isophthalic acid), n-hexane as a solvent, and 2 % tetraethyl ammonium bromide and triethyl amine as catalysts. There are 6 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR
(Institute of Elemental Organic Compounds of the AS USSR)

SUBMITTED: February 9, 1961

KORSHAK, V.V.; VINOGRADOVA, S.V.; LEBEDEVA, A.S.; Prinimala uchastiye: RESHETNIKOVA, L.L., laborant

Heterochain polyesters. Part 35: Some regularities in interfacial polyesterification. Vysokom.soed. 4 no.7:968-971 Jl '62. (MIRA 15:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Esterification)
(Polymers)

KORSHAK, V.V.; VINOGRADOVA, S.V.; U BAN-YUAN' [Wu Pang-yüan]

Heterochain polyesters. Part 36: Interfacial polycondensation of bis(p-chlorocarboxyphenyl)methylphosphine oxide with 4,4'-dihydroxyphenylpropane. Vysokom.soed. 4 no.7:982-986 Jl '62. (MIRA 15:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Phosphine oxide) (Cumene) (Esterification)

KORSHAK, V.V.; VINOGRADOVA, S.V.; VALETSKIY, P.M.; Prinimala uchastiye: MIKHAYLINA, A.I., laborant

Heterochain polyesters. Part 37: Mixed polyarylates based on terephthalic acid, dihydroxyphenylpropane, and aliphatic polyhydric alcohols. Vysokom.soed. 4 no.7:987-994 Jl '62. (MIRA 15:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

(Terephthalic acid)
(Cumene) (Alcohols)

S/190/62/004/009/003/014
B101/B144

AUTHORS: Korshak, V. V., Vinogradova, S. V., Wu Pang-yüan

TITLE: Heterochain polymers. XXXIX. The significance of the hydrolysis of bis-(p-carboxy-phenyl)-methyl phosphine oxychloride for interface polycondensation

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 9, 1962, 1320-1323

TEXT: In a previous paper (V. V. Korshak et al., Vysokomolek. soyed., 3, 371, 1961) hydrolysis of the chloride group was assumed to occur as a side reaction during the formation of polyarylates of bis-(p-carboxy-phenyl)-methyl phosphine oxychloride (I) by interface polycondensation. The course of such hydrolysis was now studied by mixing the benzene solution of I with water and by conductometric titration of the resulting HCl. Results: (1) At 25°C, the chloride first saponifies rapidly: after 5 min 37.23%, after 10 min 37.68%, and after 60 min 48.46%. (2) A rise in temperature accelerates the hydrolysis, 28.02% chloride being saponified after 30 min at 7°C and 60.37% at 60°C. (3) The presence of NaOH increases the rate of hydrolysis. (4) A change in concentration of I from 0.025 to 0.250 moles/l

affected the depth and rate of hydrolysis but slightly. (5) The hydrolysis of I is more intensive than that of isophthalic or terephthalic but less intensive than that of adipic chloride. (6) Because of the intensive hydrolysis of I, only polyarylates of low molecular weight are formed. If polyarylates of I with higher molecular weight and higher yields are wanted, polycondensation has to be conducted at low temperatures, in a considerably diluted solution with an excess of I. There are 5 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental Organic Compounds AS USSR)

SUBMITTED: May 19, 1961

41417

S/190/62/004/010/001/010
B101/B186

AUTHORS: Korshak, V. V., Vinogradova, S. V., Frunze, T. M., Kozlov, L. V., Wu Pang-yüan

TITLE: Heterochain polymers. XL. Synthesis of polyamide esters by interfacial polycondensation

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 10, 1962, 1457-1462

TEXT: A comparison is made between the properties of polycondensates obtained by interfacial polycondensation (iC) and equilibrium polycondensation (eC) of sebacic chloride (I), diane(4,4'-dihydroxy-diphenyl propane) (II), and hexamethylene diamine (III). Interfacial polycondensation was achieved by mixing 0.2 N alkaline solutions of II and III with I dissolved in hexane, and eC was brought about by heating the component mixture first in N_2 and then in vacuo, the ratio I : II : III being varied between 1 : 1 : 0 and 1 : 0 : 1. Homopolymers could be separated from the reaction product since the homopolymer I + III is insoluble in

Card 1/3

Heterochain polymers. XL. ...

p-xylene, whereas homopolymer I + II is soluble in p-xylene. The nitrogen content of the reaction product soluble in p-xylene confirmed the formation of a polyamide ester.[3] The differences observed between the products obtained by iC and eC are that the product from eC, containing less than 40% III, was better soluble in p-xylene than product from iC containing the same amount of III, whereas the eC products containing more than 40% III were not as easily soluble as the comparable iC products. Furthermore, the softening points of iC products containing less than 40% III were lower than those of the corresponding eC products. The thermomechanical curves of the iC products were flatter. At a component ratio of 1 : 0.5 : 0.5, the nitrogen contents in the insoluble part of the polymer obtained by iC and eC were ~8.7% and ~4.2%, respectively, that in the soluble part being ~1.9% in iC and ~3.6% in eC. Conclusion: I diffuses from the organic into the aqueous phase owing to hydrolysis during iC; III diffuses into the organic phase more readily than II. Hence, the polymer formed from the organic phase should contain amide units, and the product formed from the aqueous phase and should be enriched with ester units. This was confirmed by iC when the mixture was stirred at varying speeds. At a ratio of 6 : 5 : 1 and at 1000 rpm, the

polymer had a nitrogen content of 7.02% and a softening point of 194°C, at 6000 rpm, the nitrogen content was 2.07% and the softening point was 47°C. At a ratio 1 : 1 : 1, a polymer containing ~8.9% nitrogen was obtained in both cases. Hence, III has a greater reactivity than II. There are 2 figures and 3 tables. The English-language reference is: W. M. Eareckson, J. Polymer Sci., 40, 399, 1959.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental Organic Compounds AS USSR)

SUBMITTED: May 19, 1961

S/020/62/147/006/021/034
B144/B101

AUTHORS: Korshak, V. V., Corresponding Member AS USSR, Vinogradova, S. V., Teplyakov, M. M., Chernomordik, Yu. A.

TITLE: Polyester - polyamide interaction in melts

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 6, 1962, 1365-1368

TEXT: The exchange reaction between equimolecular amounts of polyethylene sebacinate and polyhexamethylene sebacinic amide was studied at 290°C in an N_2 stream in order to explain the formation of polyamide esters from complete polymers. The occurrence of an exchange reaction between amide and ester groups was proved by a preliminary experiment with acetanilide and benzyl benzoate. In polymers it was proved by comparing the properties of products obtained after 1-12 hrs with those of the polyamide ester obtained by aminolysis of polyethylene sebacinate with hexamethylene diamine, and also by turbidimetric titration. There were three possibilities of reaction : (1) Interaction between amide bonds and ester bonds of neighboring chains; (2) exchange on the active end

Card 1/3

groups; (3) synthetic reaction by interaction among the end groups of the polymer chains. The third possibility was eliminated, since the viscosity of the polymer solution in cresol reached its maximum after 1 hr. The yield point also reaches its maximum (200°C) after 1-hr heating and decreases to 165°C after 8 hrs, owing to conversion of the block polymer formed first. The minimum temperature of the exchange reaction was determined from the difference in solubility of the two initial products and of the polyamide ester in hot benzene. The reaction was much slower at 280°C. At 260°C, a reaction took place during the first 8 hrs only after the addition of 1% catalyst (CH_3-C_6H_4-SO_3H, LiOH, $NaOH \cdot Al_2O_3$, various acetates, PbO, etc). The best results were obtained with 1 - 2% PbO. There are 4 figures and 2 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR); Moskovskiy khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D.I. Mendeleyev)

S/020/62/147/006/021/034
B144/B101

Polyester - polyamide interaction ...

SUBMITTED: September 17, 1962

Card 3/3

KORSAK, V.V., VINOGRADOVA, S.V., SOSIN, S.L., SLADKOV, A.M.

Synthesis and electrophysical properties of the polymers with the conjugated system of bonds and the polycoordination polymers.

Report submitted for the International Symposium of Macromolecular chemistry Paris -1-6 July 63

KORSHAK, V.V.; VINOGRADOVA, S.V.; VALETSKIY, P.M.; DEBORIN, M.G.

Synthesis of homogeneous and mixed polyarylates from allyl-substituted phenols. Lakokras.mat.i ikh prim. no.1:3-9 '63. (MIRA 16:2)

1. Institut eksperimental'noy optiki i spektroskopii AN SSSR i Moskovskiy khimiko-tekhnicheskiy institut imeni D.I. Mendeleyeva.
(Phenols) (Arylation)

L 13548-63 EWP(j)/EWT(m)/BDS/ASD Pe-4 RM

ACCESSION NR: AP3000693 S/0190/63/005/005/0674/0680

AUTHOR: Korshak, V. V.; Vinogradova, S. V.; Lebedeva, A. S.

TITLE: Heterochain polyesters. 41. Interfacial synthesis of mixed polyarylates

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 5, 1963, 674-680

TOPIC TAGS: interfacial synthesis, interfacial condensation, polyesters, polyarylates, diane, adipyl chloride, sebacyl chloride, tetraphthalyl chloride

ABSTRACT: The study involved the formation of mixed polyarylates by interfacial polycondensation, based on the interaction of diane(n,n'-dioxyphenyl-2,2-propane) and sebacyl-, adipyl-, terephthalyl-, and isophthalyl chlorides. The procedure consisted of adding to an alkaline 0.1m diane solution a 0.1m solution of the corresponding chlorides in an organic solvent. It was found that by using the chlorides of sebacyl and terephthalyl the solubility of the obtained polymers in n-xylene decreased with an increase of terephthalyl chloride. In comparing the infrared spectra of the obtained polymer with those of the diane-sebacyl and diane-terephthalyl polyarylates, the polymer proved to be of mixed nature. Studies of its softening behavior on heating, as well as of its solubility behavior pattern in n-xylene revealed its nonhomogeneous nature. This was confirmed by x-ray investigations which suggested an intermediate crystalline-amorphous structure. The

Card 1/2

L 13548-63
ACCESSION NR: AP3000693

4

reactivity of the respective chlorides was shown to play an important role in the formation of the polyarylates, adipyl chloride heading the list. Thanks for the optical and x-ray determinations are given to the workers of the Institute of Organoelemental Compounds, Academy of Sciences SSSR, headed by I. V. Obreimov and A. I. Kitaygorodskiy. L. D. Reshetnikova participated in the experimental work. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Organoelemental Compounds, Academy of Sciences SSSR)

SUBMITTED: 12Oct61 DATE ACQ: 17Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 007 OTHER: 000

Card 2/2

L 13517-63 EPF(c)/EIP(j)/EWT(m)/BDS ASD Pf-4/Pc-4 RM/MAY/WW

ACCESSION NR: AP3001146 S/0190/63/005/006/0799/0804

AUTHOR: Iskenderov, M. A.; Korshak, V. V.; Vinogradova, S. V.; Kharlamov, V. V.

TITLE: Heterochain polyesters. 42. Mixed polyarylates based on dihydroxynaphthalenes

SOURCE: Vysokomolekulyarny*ye soyedineniya, v. 5, no. 6, 1963, 799-804

TOPIC TAGS: polyester, heterochain compound, polyarylate, dihydroxynaphthalene, dian

ABSTRACT: The synthesis of mixed polyarylates was accomplished by polycondensation of 10 isomers of dihydroxynaphthalene, dian, and the chlorides of terphthalic, isophthalic, adipic and sebacic acids in ditolylmethane, at temperatures ranging from 100 to 220C for periods of 1 to 12 hours. The polyarylates obtained on the basis of terephthalic acid were mostly of mixed crystalline-amorphous structure and had softening points from 500-130C, the highest belonging to the 1,3-isomer. Where isophthalic acid was the base, the softening point had a range of 400-25C, and it showed a still lower range of 190-5C with adipic acid, going still further down with sebacic acid, ranging from 35C to -18C. Thus it seems that increasing the number of methylene groups in the aliphatic dicarbonic acids from 4 to 8 causes

Card 1/2

L 13517-63
ACCESSION NR: AP3001146

a marked drop in the softening-point temperature, which was also found to be accompanied by a higher solubility and a lower crystallizability of these polymers. Thanks are given to the co-workers of the laboratory of the Institute of the Elementoorganic Compounds, of the Academy of Sciences SSSR, headed by A. I. Kitaygorodskiy, for conducting the x-ray structural investigation of the polymers. Orig. art. has: 5 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elementoorganic Compounds, Academy of Sciences SSSR)

SUBMITTED: 01Nov61 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 005 OTHER: 000

Card 2/2

L 13585-63 FCS(f)/EWP(j)/EWT(m)/EPF(c)/BDS AFFTC/ASD Pc-4/
Pr-4 JAJ/RM/WW

ACCESSION NR: AP3003784 S/0190/63/005/007/0969/0975

AUTHOR: Korshak, V. V.; Vinogradova, S. V.; Wu, Peng-yuan 69 67

TITLE: Heterochain polymers. 43. Preparation of phosphorus-containing poly(amide esters) by interfacial polycondensation

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 7, 1963, 969-975

TOPIC TAGS: poly(amide ester), 4,4'-(methylphosphinylidene)dibenzoic acid, 4,4'-(methylphosphinylidene)dibenzoic acid-based poly(amide esters), 4,4-(methylphosphinylidene)dibenzoyl chloride, 4,4'-isopropylidenediphenol, 1,6-hexanediamine, poly(amide ester) synthesis, interfacial polycondensation, equilibrium polycondensation, thermomechanical curve, poly(amide ester) thermomechanical curve

ABSTRACT: 4,4'-(Methylphosphinylidene) dibenzoic acid-based poly(amide esters) have been synthesized for the first time by interfacial polycondensation of 4,4'-(methylphosphinylidene)dibenzoyl chloride (I), 4,4'-isopropylidenediphenol (II), and 1,6-hexanediamine (III). The reaction was conducted in 0.5 N chloroform solution with vigorous agitation. The poly(amide esters) were produced in yields of 56.5 to 81.8% depending on the I/II/III ratio, which varied from 1/1/0 to 1/0/1. The formation of copolymers (rather than of a mixture of homopolymers)

Card 1/2

L 13585-63
ACCESSION NR: AP3003784

2

was ascertained by chemical, solubility, IR-spectroscopic, and thermomechanical methods. The structure of the poly(amide esters) was heterogeneous, but approached that calculated from the monomer ratios. III was more reactive with I than with II. The poly(amide esters), depending on the initial monomer mixture composition, are either white, transparent, or semitransparent amorphous powders with softening temperatures of 165 to 253C. Their solubility in such solvents as benzene, chloroform, dioxane, and tetrahydrofuran is low. They dissolve more readily in tetrachloroethylene. Their low molecular weight (as indicated by reduced viscosity) can be increased by conducting the reaction in the presence of mersolat emulsifier. Poly(amide esters) were also synthesized by equilibrium polycondensation, in which case the products are transparent, slightly colored resins having a lower molecular weight than the poly(amide esters) prepared by interfacial polycondensation. Orig. art. has: 3 figures and 4 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Organoelemental Compounds, AN SSSR)

SUBMITTED: 27Nov61 DATE ACQ: 08Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 002 OTHER: 000

Card 2/2

reactions of polyarylates

SOURCE: Khimicheskiye svoystva i modifikatsiya polimerov (Chemical properties and the modification of polymers). Moscow, Izd-vo Nauka, 1964, 120-130

TOPIC TAGS: polyarylate, radiation chemistry, isophthalic acid, diphenylol propane, polyethylene terephthalate, ionizing radiation

ABSTRACT: For the investigation of the radiation-induced chemical reactions of

Card 1/3

L 34146-65

ACCESSION NR: AT4049851 2

tor voltage of 800 kv, a current density of 0.1-0.2 microampere (on the samples), [illegible] preparation of the different samples and

0.02 mole/100 ev, which is much lower than the yield from [illegible] ethylene terephthalate or polycarbonate. The molecular structure of polyarylates does not change significantly at doses on the order of 10^{23} ev/cc. It is to be noted that, in the gaseous products of the radiolysis of polyarylate (ID) [illegible] containing diphenylolpropane residues, even traces

containing analogous groups [illegible] of the gaseous mixture. From the experimental data and from the fact that hydro-

Card 2/3

L 3146-65

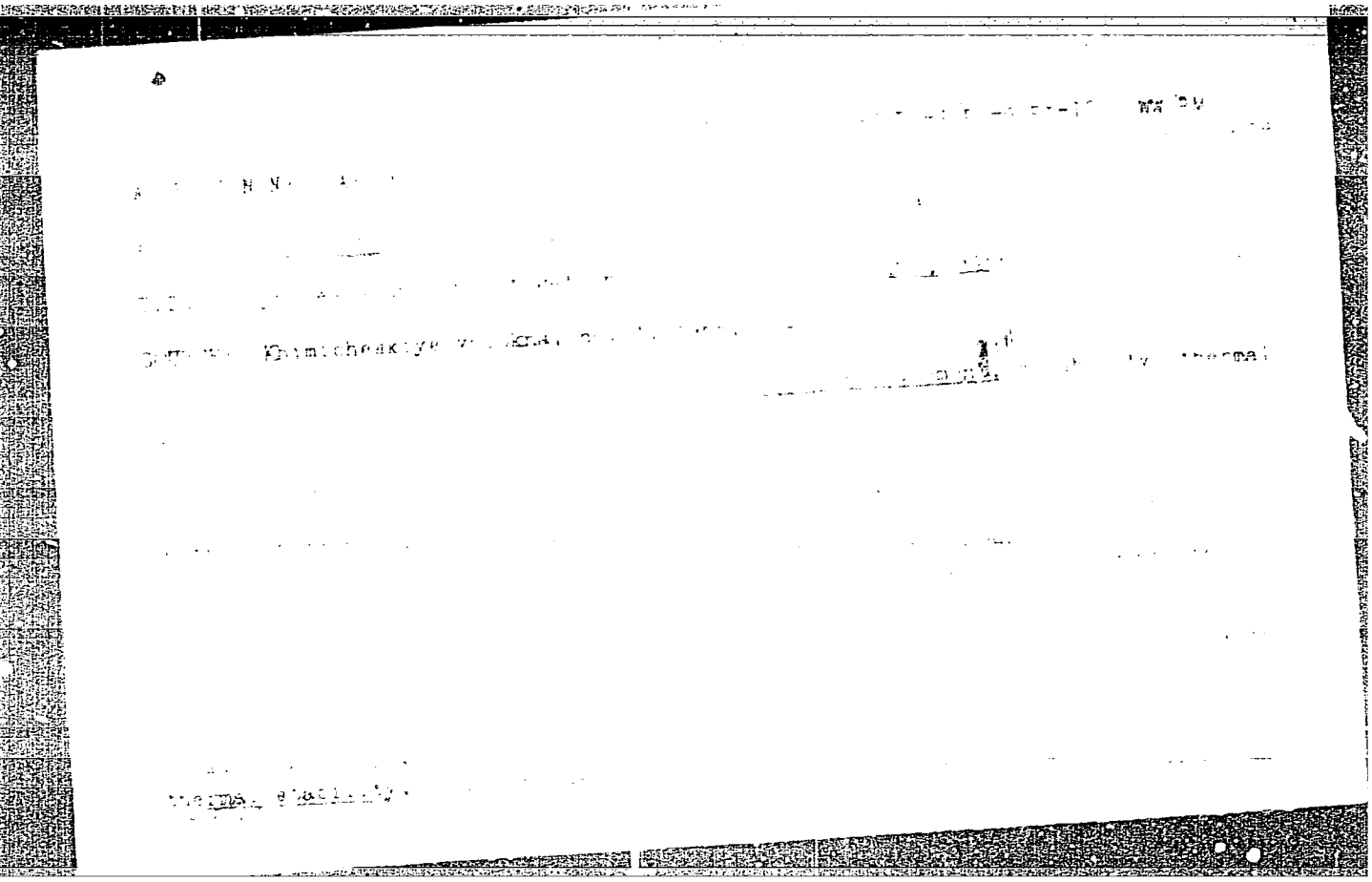
ACCESSION NR: AT4049851

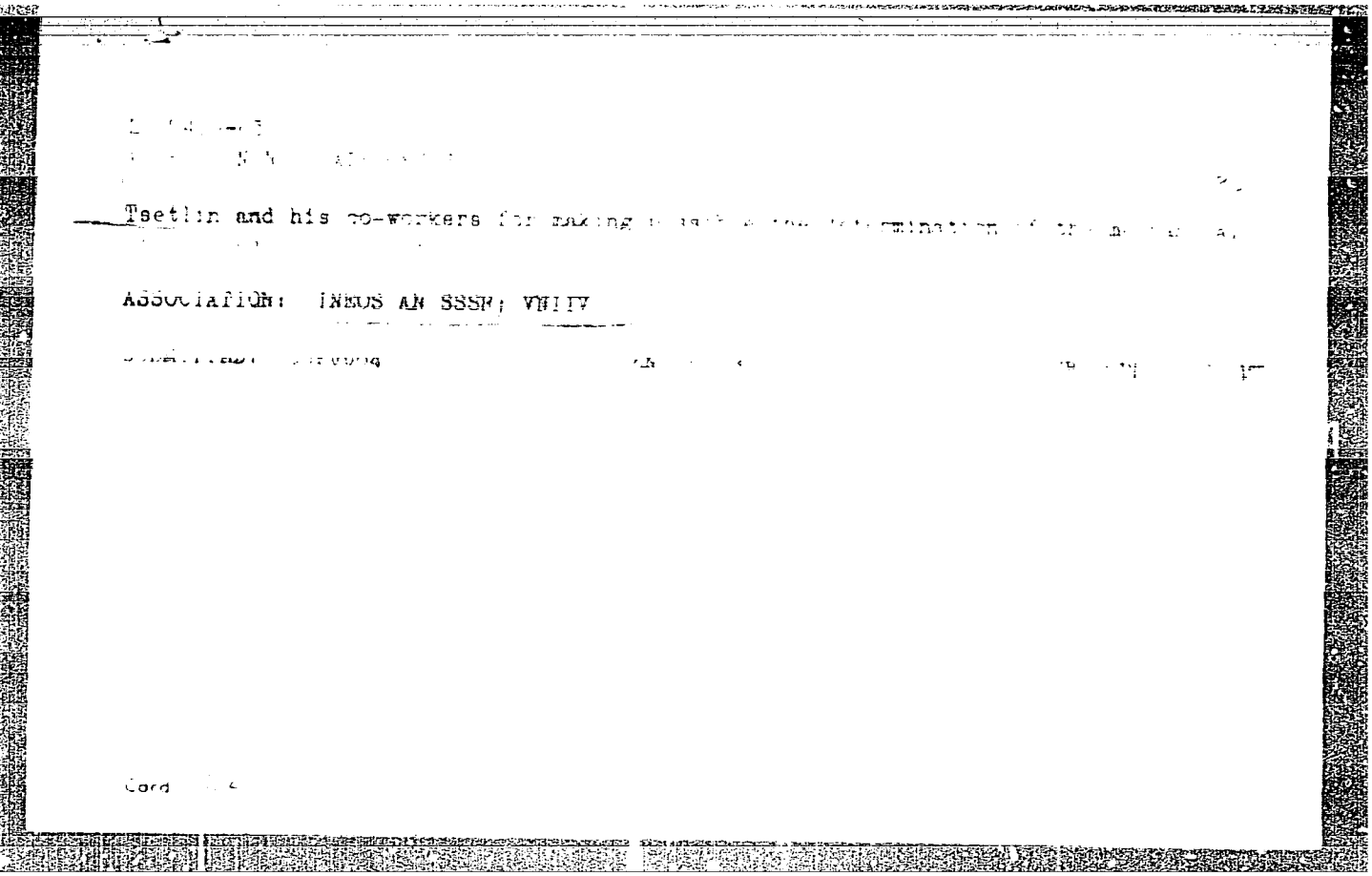
the phenyl groups. Orig. art. has: 2 figures and 3 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Heteroorganic compound institute AN SSSR)

NO REF SOV 005 OTHER 002

Card 3/3





Tsetlin and his co-workers for [illegible]

Association: INEOS AN SSSR; VNIIV

Card [illegible]

ACCESSION NR: AP4019009 S/0062/64/000/002/0334/0340

AUTHOR: Teplyakov, M.M.; Korshak, V. V.; Vinogradova, S.V.

TITLE: Investigation of the exchange reaction between a polyamide and a polyarylate

SOURCE: AN USSR. Izv. Seriya khimicheskaya, no. 2, 1964, 334-340

TOPIC TAGS: polyamide polyarylate interaction, interchain reaction, polyamide, polyarylate, polyamide ester, synthesis

ABSTRACT: This is a continuation of a work done by the same authors (Dokl. AN SSR 147, 1365 1962) where they showed the possibility of synthesizing polyamide esters by interchain interaction of initial polyamide macromolecules and a polyester. The present article was prompted by the higher thermal stability and other valuable properties of polyarylates for the production of polyamisoarylates. For this purpose the authors investigated the interchain reactions of polyarylates and polyamides. They selected for their tests the reaction between polyhexamethysebacineamide and polydiphenylpropanesebacinate (a polyester of sebacic acid and 4,4'-dioxy-2,2'-dipehylpropane). Condensation was carried out in test tubes in an inert gas at temperatures from 240 to 280C with and without a catalyst. The selected catalysts were p-toluene stlfoacid, lithium hydroxide, lead oxide, zinc

Card 1/2

ACCESSION NR: AP4019009

acetate, and tetrabutoxy titanium. Most suitable was lead oxide. It enhances lower reaction temperatures (240C) and their rate. The properties of the reaction product depend on the proportion of the initial compounds, temperature and duration of the reaction. Orig. art. has 4 figures, no formulas, 4 tables.

ASSOCIATION: Institut elementoorganicheskikh siyedineniy Akademii nauk SSSR (Institute of Organomelallic Compounds, Academy of Sciences, SSSR); Moskovskiy khimiki-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical-Engineering Institute)

SUBMITTED: 05Sep63 DATE ACQ: 27Mar64 ENCL: 00

SUB CODE: CH NO. REF SOV: 006 OTHER: 001

Card 2/2

KORSHAK, V.V.; VINOGRADOVA, [illegible]; [illegible] (Ma Pang-yuan)

Heterochain polyesters. Report No. 49. Regularities of the formation of polyamidoarylates under conditions of interfacial polycondensation. Izv. AN SSSR. Ser.khim. no. 5:899-904 My '64. (MIRA 17:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 22978-65 EWT(m)/EPF/ EWP... T Pc-4 Pr-4 RPL JAJ RM
ACCESSION NR AP4042876 S/0062/64/000/007/1288/1292

AUTHOR Korshak, V. V.; Vinogradova, S. V.; Wu Pang-yuan

TITLE: Heterochain polyesters. Communication 50. Structure of polyamidoarylates obtained by interphase polycondensation.

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1964, 1288-1292

TOPIC TAGS: polyamidoarylate, structure, heterochain polyester, phosphorus

ABSTRACT: The structure of polyamidoarylates prepared from bis(p-carboxyphenyl)- ... hexamethylenediamine ...

L 12978-65
ACCESSION NR: AP4042876

sizes can be obtained. Thus, polyarylates obtained by interphase polycondensation

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR

SUBMITTED:

ACCESSION NR: AP4042877 S/0062/64/000/007/1292/1295

AUTHOR: Korshak, V. V.; Vinogradova, S. V.; Wu, Pang-yuan

TITLE: Heterochain polyesters Communication 51. Polyamidoarylates and polyarylates based on the chloranhydride of bis(p-carboxyphenyl)methylphosphine oxide.

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1964, 1292-1295

TOPIC TAGS: Heterochain polyester, polyamidoarylate, polyarylate, phosphorus containing polyester, synthesis, interphase polycondensation, solution polycondensation, thermally reactive polyarylate, softening temperature, viscosity, crystallinity, linear polymer, self extinguishing polymer

ABSTRACT: Polyamidoarylates based on the chloranhydride of bis(p-carboxyphenyl)-methylphosphine oxide, diatomic phenols (diane, resorcinol, diallyldiane) and diamines (hexamethylenediamine, m-phenylenediamine, piperazine) were synthesized by the interphase polycondensation method. Polyarylates based on the chloranhydrides of bis(p-carboxyphenyl)-methylphosphine oxide, of terephthalic, isophthalic or sebacic acids and phenols (diane, resorcinol, hydroquinone) were synthesized by equilibrium polycondensation in high boiling solvent. A thermally reactive

Card 1/2

ACCESSION NR: AP4042877

polyarylate containing free hydroxyl groups in the chain and which can undergo further chemical reaction or form insoluble and infusible products on heat treatment was synthesized from bis(p-carboxyphenyl)methylphosphine oxide, diane and trimethylolpropane. All the products were characterized with respect to softening temperature, viscosity in tricresol, and crystallinity. The polyamidoarylates are powdery materials. The diane-hexamethylene-diamine-containing product had the highest softening temperature, 178-190C; a film of it cast under nitrogen had a tear strength of 640 kg/cm^2. The polyarylates were obtained in high yield; most of them were self-extinguishing linear polymers with a structure between crystalline and amorphous. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Institut elemantoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organometallic Compounds, Academy of Sciences, SSSR)

SUBMITTED: 30Oct62 ENCL: 00

SUB CODE: OC NO REF SOV: 002 OTHER: 000

Card 2/2

VINOGRADOVA, S.V.; VINOGRADOV, M.G.; KORSHAK, V.V.

Kinetics of polycoordination. Kin. i kat. 5 no.2:247-252 Mr-Ap '64. (MIRA 17:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

KORSHAK, V.V.; VINOGRADOVA, S.V.; VINOGRADOV, M.G.

Coordination polymers. Part 19: Exchange reactions in the polycondensation process. Vysokom. soed. 6 no.4:729-733 Ap '64. (MIRA 17:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ROZH, A.V.; [illegible], I.V.; REPINOV, S.A.; ROZHKOVA, V.V.; [illegible], S.V.; SAFAZ M, S.M.

Chemical transformation of polymers. Part 18. Vysokom. soed. 6 no.6:994-996 Je '64 (MIRA 18:2)

ACCESSION NR: AP4043777 S/0190/64/006/008/1403/1406

AUTHOR: Vinogradova, S. V., Korshak, V. V., Salazkin, S. N., Bereza, S. V.

TITLE: Heterocyclic polyesters. LX. Polyarylates based on Phenolphthalein anilide

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 8, 1964, 1403-1406

TOPIC TAGS: polyester, polyarylate, phenolphthalein, phenolphthalein anilide, heterocyclic polyester

ABSTRACT: Using their method of equilibrium condensation described in Vy*sokomolekulyarny*ye soyedineniya 4, 339, 1962, with chlorodiphenyl in place of ditolylmethane as the solvent, the authors prepared polyarylates of 4,4'-diphenyldicarboxylic, terephthalic, isophthalic, diphenic, fumaric and sebacic acids with phenolphthalein anilide as the base. The phenolphthalein anilide was prepared by a procedure described by Albert (Berichte der deutschen chemischen Gesellschaft, 26, 3077, 1893); and technique of interphase polycondensation, which was also employed consisted of 1. adding a 0.1 benzene solution of chloroanhydride of the dicarboxylic acid to a 0.1 alkaline solution of phenolphthalein anilide, containing 0.9-1.0% of nekal, 2. thoroughly mixing for 20 min, and 3. precipitating the polymer with methanol, washing with methanol and hot water and drying in a vacuum at 80C.

Card 1/2

ACCESSION NR: AP4043777

The properties of the polymers are discussed, the most significant being their ability to form transparent heat-resistant films withstanding temperatures of up to 250C. "L. L. Reshetnikova took part in the experimental work." Orig. art. has: 5 tables and 1 structural formula.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Organo-Metallic Compounds, AN SSSR).

SUBMITTED: 13Aug63 SUB CODE: OC

NO REF SOV: 003 OTHER: 001

Card 2/2

L 35476-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4 SW

ACCESSION NR: AP5017[illegible]

AUTHORS: Korshak, V. V.; Vinogradova, S. V.; Antonova-Antipova, I. P.

TITLE: Colored polyarylates from 3,3'-azobenzenedicarboxylic acid

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 2, 1965, 322-327

TOPIC TAGS: dicarboxylic acid, synthetic polymer, [illegible]

ABSTRACT: The synthesis of 3,3'-azobenzenedicarboxylic acid polyarylates was accomplished by the equilibrium method and also [illegible]

Card 1/2

L 35476-65
ACCESSION NR: AP5005602

(melting point = 83.5-84.5C). This product, colored yellow, was used as initial material for producing synthetic [illegible] polyarylates. [illegible] homogeneous and mixed polyarylates were formed. With phenolphthalein, both were found to be readily soluble in organic solvents and to have high softening temperatures. They easily form [illegible]

From 3,3'-azobenzenedicarboxylic acid polyarylates to 4,4'-azobenzenedicarboxylic acid polyarylates. [illegible] tables.

ASSOCIATION: none

SUBMITTED: [illegible] DATE: [illegible] ENCL: [illegible]

NO REF SOV: 001 OTHER: 003

Card 2/2

L 12433-65 EWT(m)/EPF(c)/T/EWP(j) Pc-4/Pr-4 AEDC(a)/SSD/AFWL RM

ACCESSION NR: AP4036723 S/0020/64/156/002/0368/0371

AUTHORS: Korshak, V.V. (Corresponding member AN SSSR); Vinogradova, S.V.; Papava, G.Sh.; Tsiskarishvili, P.D.

TITLE: Investigations in the area of mixed block-polyarylates

SOURCE: AN SSSR. Doklady*, v. 156, no. 2, 1964, 368-371

TOPIC TAGS: mixed block polyarylate, synthesis, polycondensation, property modification, elesticity, solubility, viscosity, pentone, silicon containing oligomer, polypropyleneglycol, polyethyleneglycol, [illegible] polyarylate, polypropyleneglycol polyarylate, polyethyleneglycol polyarylate, softening point, light [illegible] polymerization

ABSTRACT: Mixed block-polyarylates containing different structures in the block were synthesized to determine the possibility of modifying [illegible] increasing elasticity, colorability, solubility [illegible]

ACCESSION NR: AP4036723

phenol molecule radical and D = dicarboxylic acid chloranhydride molecule radical, result in the synthesis of the mixed block polyarylates

1. $n\text{HO}-\text{A}-\text{OH} + n\text{ClOC}-\text{D}-\text{COCl} \rightarrow 2n\text{HCl} + -[\text{OAOOCDCO}]_n-$
2. $n\text{HO}-\text{B}-\text{OH} + n\text{ClOC}-\text{D}-\text{COCl} \rightarrow 2n\text{HCl} + -[\text{OBOCCDCO}]_n-$
3. $n\text{HO}-\text{A}-\text{OH} + 2n\text{ClOC}-\text{D}-\text{COCl} + n\text{HO}-\text{B}-\text{OH} \rightarrow$
$\rightarrow 4n\text{HCl} + -[\text{OAOOCDCOC BOOCDCO}]_n-$

Low molecular bifunctional polymers with terminal hydroxyl groups were used for the block component: pentone-7 (PN): $H\left[OCH_2O(CH_2O)_2CH_2\right]_n$

ACCESSION NR: AP4036723

block component in the reaction mixture, increasing the block component lowers the product softening temperature and frequently im-

[illegible]

melting at 64°C. The properties of the mixed block polyarylates

anhydride with isophthalic lowers the softening temperature of the

Card 3/5

L 12473-65

ACCESSION NR: AP4036723

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii [illegible] Akademii

SSR (Institute of Chemistry, Academy of Sciences, GruzSSR)

SUB CODE: GC, GC NR REF SOV: 002 OTHER: 004

L 12433-65

ACCESSION NR: AP4036723

ENCLOSURE 01

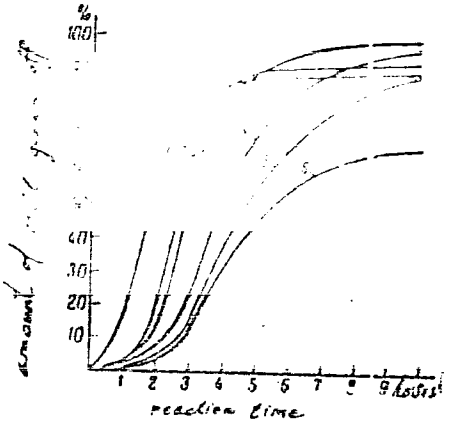


Fig. 1

Change in the amount of hydrogen chloride given off in the reaction of the chloro-

5--PN-3; 6--Si

Card 5/5

KORSHAK, V.V.; VINOGRADOVA, S.V.; PANKRATOV, V.A.

Effect of the structure of initial biphenols on the properties of polyarylates. Dokl. AN SSSR 156 no. 4:880-883 Je '64. (MIRA 17:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Korshak).

ACCESSION NR: AP4041160 S/0020/64/156/004/0924/0925

AUTHOR: Slonimskiy, G. L.; Korshak, V. V.; Vinogradova, S. V.; Kitaygorodskiy, A. I.; Askadskiy, A. A.; Salazkin, S. N.; Belavtseva, Ye. M.

TITLE: Physico-chemical means of regulating supermolecular structure and mechanical properties of amorphous polyarylate F-1.

SOURCE: AN SSSR. Doklady*, v. 156, no. 4, 1964, 924-925, and insert facing p. 924

TOPIC TAGS: polyarylate, supermolecular structure, amorphous polymer, mechanical property, control, regulation, phenolphthalein isophthalic acid polymer, polymerization, reaction medium, brittleness, elongation, strength, impact strength, rigid macromolecular structure

ABSTRACT: The supermolecular structure and consequently the mechanical properties, especially the brittleness, of amorphous polyarylate F-1 (phenolphthalein-isophthalic acid based polymer) were improved by selecting a new polymerization reaction medium. Electron microscopic comparison of F-1 polymerized as previously in ditolylmethane in which it is insoluble and polymerized in α-chloronaphthalene in which it is soluble showed the structure no longer comprised a multitude of fine weakly bonded spherical particles, but was fibrillar with no fractures. In the

Card 1/2

ACCESSION NR: AP4041160

ditolylmethane the free energy of formation of the coagulated macromolecule was less than for an uncoiled macromolecule. The desired change in the superstructure (i.e., uncoiling) was effected by the solvent. The mechanical properties of the two types of F-1 of the same molecular weight (28,000) were compared. The elongation increased from 10-20% in the brittle to 50-80% in the fibrillar material; strength increased from 640-740 kg/cm^2 and impact strength from 2-3 to 6-10 kg.cm/cm^2. Thus brittleness was reduced by a factor of about 4. In the 50,000 molecular weight material the elongation was 130% and impact strength, 20 kg.cm/cm^2. It is concluded that the mechanical properties of polymers with rigid macromolecules should be regulated not only by chemical changes in the macromolecule but also by the physical conditions of the surrounding media in which the macromolecule is formed. Orig. art. has: 2 figures.

ASSOCIATION: Institut elementoorganicheskikh soyedinenij Akademii nauk SSSR (Institute of Organometallic compounds Academy of Sciences SSSR)

SUBMITTED: 02Mar64 ENCL: 00

SUB CODE: OC, SS NO REF SOV: 005 OTHER: 000

Card 2/2

AUTHORS: Korshak, V. V.; Vinogradova, S. V.;

Card 1/2

L 2676-65 EWT(m)/EWP(e)/EWA(d)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5017834 UR/0286/65/000/011/0076/0076
678.675.4.002.2

AUTHOR: Korshak, V. V.; Vinogradova, S. V.; Teplyakov, M. M.; Chernomordik, Yu. A.

TITLE: A method for producing polyamide esters. Class 39, No. 171553

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 11, 1965, 76

TOPIC TAGS: polyamide resin, polyester plastic

ABSTRACT: This Author's Certificate introduces: 1. A method for producing polyamide esters. The process is simplified by heating polyesters with polyamides in a stream of nitrogen at 250-300C. 2. A modification of this method in which the

ASSOCIATION: none

SUBMITTED: 13Sep62 ENCL: 00 SUB CODE: MT

NO REF SOV: 000 OTHER: 000

Card 1/1

L 15323-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6000978 (A) SOURCE CODE: UR/0286/65/000/022/0058/0058

AUTHORS: Korshak, V. V.; Vinogradova, S. V.; Salazkin, S. N.; Bereza, S. V.

ORG: none

TITLE: A method for obtaining homogeneous and mixed polyarylates. 15,44,55 Class 39, No. 176401

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 58

TOPIC TAGS: polymer, polycondensation, phenol, polyaryl plastic, plastic

ABSTRACT: This Author Certificate presents a method for obtaining homogeneous and mixed polyarylates, an interphase polycondensation of dihydroxyphenols and chloroanhydrides of dicarboxylic acids. To increase the variety of thermostable and soluble polyarylates, the imide of phenolphthalein-3,3-bis-(4-oxyphenyl)-phthalimide is used as the dihydroxyphenol.

SUB CODE: 11/07/ SUBM DATE: 27Jun63

Card 1/1 BC UDC: 54-126:547.461.2'053
547.633.6

L 15337-66 EWT(m)/EWP(j)/T WW/RM

ACC NR: AP6000981 (A) SOURCE CODE: UR/0286/65/000/022/0059/0059

AUTHORS: Korshak, V. V.; Vinogradova, S. V.; Valetskiy, P. M.; Lavrinenko, T. G.

ORG: none

TITLE: A method for obtaining thermoactive polyarylates. Class 39, No. 176404

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 59

TOPIC TAGS: polymer, polymerization, polycondensation, epoxy, plastic

ABSTRACT: This Author Certificate presents a method for obtaining thermoactive polyarylates. To enhance the properties of the polyarylates, unsaturated polyarylates derived from allyl-substituted phenols are epoxidated with organic per-acids.

SUB CODE: 11/ 07/ SUBM DATE: 31Jan64

GC

Card 1/1

UDC: 678.673:547.581.2

L 16103-66 EWP(j)/EWT(m) RM/WW
ACC NR: AP6003250 (A) SOURCE CODE: UR/0020/65/165/006/1323/1324

AUTHOR: Slonimskiy, G. L.; Korshak, V. V. (Corresponding member AN SSSR); Vinogradova, S. V.; Kitaygorodskiy, A. I.; Askadskiy, A. A.; Salazkin, S N.; Belavtseva, Ye. M. 51 53

ORG: Institute of Hetero-organic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR) B

TITLE: Difference in supramolecular structures of amorphous polyarylates obtained by interfacial polycondensation and high-temperature polycondensation in homogeneous media 44

SOURCE: AN SSSR. Doklady, v. 165, no. 6, 1965, 1323-1324, and insert facing p. 1324

TOPIC TAGS: polyaryl plastic, interfacial polycondensation, polycondensation, polymer, impact strength, tensile strength

ABSTRACT: Electron-microscopic and mechanical studies were carried out on specially synthesized types of F-7 polyarylates (products of polycondensation of terephthaloyl chloride with phenolphthalein anilide). The results fully confirmed the hypothesis that in interfacial polycondensation, when the polymer is formed at the interface of two liquid phases in which it is insoluble, the supramolecular

Card 1/2 UDC: 541.64

L 16103-66
ACC NR: AP6003250

structure should be globular, whereas in homogeneous polycondensation in a solvent medium, the structure of the polymer is predominantly fibrillar. The mechanical properties were consistent with these observations: polyarylate F-7, prepared by polycondensation in a homogeneous medium, had a greater impact and tensile strength and higher softening point than polyarylate F-7-M, synthesized by interfacial polycondensation. This fact is particularly notable, since it shows that an amorphous polymer of the same chemical structure can have different softening points depending upon the supramolecular structure. Orig. art. has: 1 table.

SUB CODE: 11,07/ SUBM DATE: 14Jul65 / ORIG REF: 004

Card 2/2

VINOGRADOVA, S.V.; KORSHAK, V.V.; [illegible], [illegible]; [illegible], [illegible]

Heterochain polyesters. Report No.57: [illegible] of aromatic dicarboxylic acid chlorides with polyhydric aliphatic alcohols. Izv.AN SSSR. Ser.khim. no.1:70-76 '64. (MIRA [illegible]:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i Moskovskiy khimiko-tekhnologicheskiy institut im. D.I.Mendeleyeva.

L 18415-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM
ACC NR: AP6003421 (A) SOURCE CODE: UR/0190/66/008/001/0109/0114

AUTHORS: Korshak, V. V.; Vinogradova, S. V.; Korchevoy, M. G.; Kul'chitskiy, V. I.

ORG: Institute of Elementoorganic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR); Moscow Institute of Chemical Engineering im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Copolymers of allyl-substituted unsaturated polyarylates with vinyl and allyl monomers (81st Report in Series "On Heteroaliphatic Polyesters")

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 1, 1966, 109-114

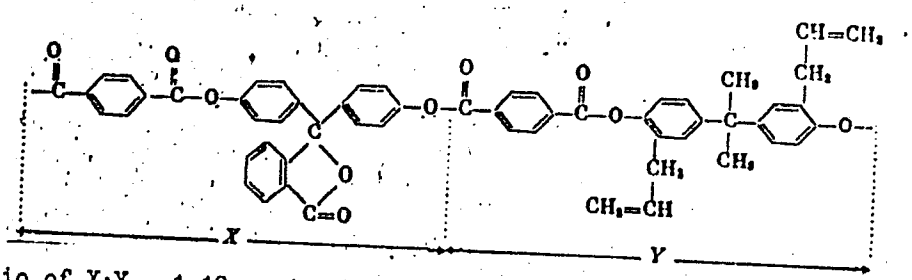
TOPIC TAGS: polyaryl plastic, copolymerization, thermal stability, tensile strength, methyl methacrylate

ABSTRACT: Allyl-substituted polyarylates (I) of different molecular weights and concentrations of allyl groups copolymerized with various vinyl and allyl monomers were investigated. The solubility, thermal stability, and tensile strength of the products were studied. Most suitable of the examined (I) were those derived from terephthalic chloroanhydride, phenolphthalein, diallyldian, and 2-allylphenol, the structure of which may be represented by the formula:

Card 1/2

UDC: 66.095.26+678.674

L 18415-66
ACC NR: AP6003421



with ratio of X:Y = 1.19 or 4. Their synthesis was described in an earlier work by V. V. Korshak, S. V. Vinogradova, M. G. Korchevey, and L. I. Komarova (Vysokomolek. soyed., 7, 457, 1965). It was established that methyl methacrylate, allyl methacrylate, dimethacrylate of ethylene glycol, and 2-allylphenol methacrylate are satisfactory cross-linking agents for (I). The last two compounds yield products of very high thermal stability and tensile strength, even after treatment at 300C in the presence of air. They are also inert to solvents and to sulfuric acid. Orig. art. has: 5 tables, 1 figure, and 1 structure.

SUB CODE: 07/ SUBM DATE: 18Feb65/ ORIG REF: 006/ OTH REF: 001

Card 2/2 pa

VINOGRADOVA, S.V.; KORSHAK, V.V.; PAPAVA, G. Sh.; TSISKARISHVILI, P.D.

Mixed block polyarylates based on a polyorganosiloxane oligomer, diatomic phenols, and aromatic dicarboxylic acid chlorides. Vysokom. soed. 8 no. 1:131-135 Ja '66 (MIRA 19:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i Institut khimii imeni Melikishvili AN GruzSSR. Submitted March 1, 1965.

L 26121-66 EWP(j)/EWT(m)/ETC(m)-6/T IJP(c) JW/WW

ACC NR: AP6015046 (A) SOURCE CODE: UR/0190/66/008/005/0809/0814

AUTHOR: Vinogradova, S. V.; Korshak, V. V.; Vygodskiy, Ya. S.

ORG: Institute of Heteroorganic Compounds AN SSSR (Institut elementoorganicheskikh soyedeneniy AN SSSR)

TITLE: Aromatic polypyromellitimides from aromatic diamines which contain a side phthalide or phthalimidine group

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 5, 1966, 809-814

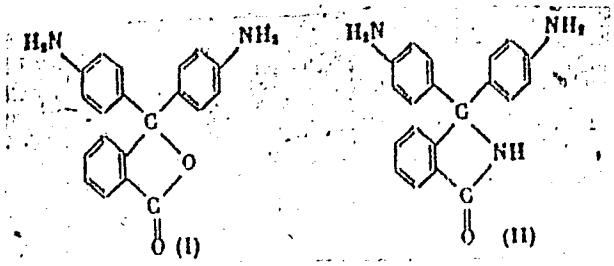
TOPIC TAGS: polypyromellitimide, anilinephthalein, anilinephthalein imide, pyromellitic anhydride, heat resistant polymer, thermostable polymer

ABSTRACT: This study was prompted by the possibility for using some aromatic diamines for the synthesis of polypyromellitamides other than the previously used aromatic diamines of the type AN-Ar-NH_2 or H_2N-Ar-R-Ar-NH_2, where Ar is an arylene radical and R is -O-, -S-, $-CH_2-$ or $-C(CH_3)_2-$. In particular, the use of the diamines 3,3-bis-(4-aminophenyl)-phthalide (I), also called anilinephthalein, 3,3-bis-(4-aminophenylphthalimidine (II), also called anilinephthalein imide, was considered to be promising for obtaining soluble and modifiable (i.e., reactive) polypyromellitimides. Bisphenols of similar structure imparted valuable physical chemical properties to the arylates:

Card 1/3 UDC: 678.675

L 26121-66

ACC NR: AP6015046



The polymers investigated were obtained in two stages: 1) a polyaminoacid, and 2) a polyamide. The polyaminoacid stage was obtained by polycondensation of one of the above-mentioned amines with pyromellitic anhydride in dimethylformamide or dimethylacetamide solutions at 25C; maximum yields were achieved with the equimolar ratio of components. It was observed that at this temperature, the maximum viscosity, i.e., the maximum polymerization degree, was achieved after 5 hours, after which time destructive hydrolysis was observed. The second stage, i.e., polycyclization of the polyaminoacid stage to a polyimide stage, was achieved by heating at 120C in vacuum the polyaminoacid films obtained from their solutions in organic solvents or mixtures of organic solvents. In such films the IR spectra indicated complete disappearance of COOH group adsorption bands and considerable changes in the position of imide groups. Another chemical method of polycyclization consisted of treatment with a 1:1 acetic anhydride and pyridine mixture with subsequent rapid heating to 300C in vacuum. Polypyromellitimides obtained with I or II display considerable

Card 2/3

L 26121-66
ACC NR: AP6015046

heat resistance, thermal stability, and resistance to light and oxidation, especially as compared with polypyromellitimides from m- or o-phenylenediamine, benzidine or 4,4'-diaminodiphenoxide. The study confirmed that the presence of phthalide or phthalimide groups at the central diamine atom results in the formation of soluble aromatic polyimides. Orig. art. has: 3 figures. [BN]

SUB CODE: 07, 11/ SUBM DATE: 14Apr65/ ORIG REF: 002/ OTH REF: 010/ ATD PRESS: 4252

Card 3/3 CC

L 27335-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6008966 (A) SOURCE CODE: UR/0190/65/007/011/1884/1888

AUTHORS: Vinogradova, S. V.; Korshak, V. V.; Korchevoy, M. G.

ORG: Institute of Elementoorganic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Copolymerization of allyl-substituted unsaturated polyarylates with styrene (76th report in the series "Heterochain polyesters")

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 11, 1965, 1884-1888

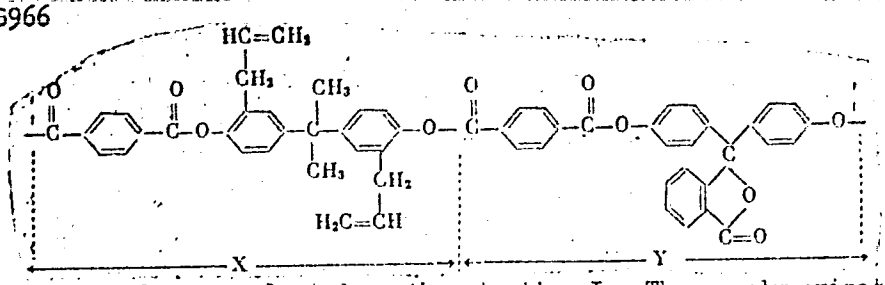
TOPIC TAGS: copolymerization, graft copolymer, polyaryl plastic

ABSTRACT: Copolymerization of allyl-substituted unsaturated polyarylates (I) with styrene (II) has been investigated in an effort to prepare a three-dimensional polymer analogous to those derived from polyfumarates described by A. V. Tokarev (Dissertatsiya, 1959). A mixed polymer, represented by the scheme

Card 1/2 UDC: 66.095.26+678.674+678.746

L 27335-66

ACC NR: AP6006966



in which ratio Y:X = 1.19, was selected as the starting I. The copolymerization was performed at 80C, in sealed ampules, and in an argon atmosphere, with benzoyl peroxide used as an initiator. It was observed that a gel effect, which increases with increased ratio of I to II, affects the reaction rate. The products of the reaction are mainly branched graft copolymers, with only an insignificant amount of three-dimensional copolymers formed when the ratio of I to II is large. Orig. art. has: 2 tables, 2 figures, and 1 formula.

SUB CODE:07, 11/SUBM DATE: 07Dec64/ ORIG REF: 010/ OTH REF: 004

Card 2/2

L 27332-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6008967 SOURCE CODE: UR/0190/65/007/011/1889/1893

AUTHORS: Vinogradova, S. V.; Korshak, V. V.; Korchevey, M. G.

ORG: Institute of Elementary Organic Compounds AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

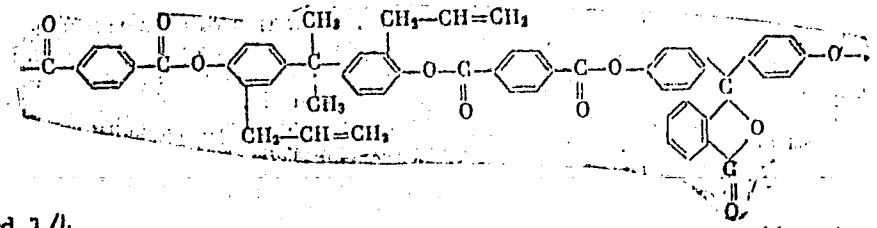
36
B

TITLE: Copolymerization of allyl substituted unsaturated polyarylates with polyarylates with methyl methacrylate (77th report in the series "Heterochain Polyesters")

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 11, 1965, 1889-1893

TOPIC TAGS: copolymerization, polymerization kinetics, polyaryl plastic

ABSTRACT: Kinetics of copolymerization of allyl-substituted polyarylates (I) represented by the formula



Card 1/4

UDC: 66.095.26+678.674+678.744

with methyl methacrylate (II) has been studied as a continuation of the search for a suitable cross-linking agent for I, previously discussed by the authors (S. V. Vinogradova, V. V. Korshak, and M. G. Korchevey, Vysokomolek. soyed., 7, 1884, 1965). Figure 1 summarizes the information obtained. Methyl methacrylate was found to be a satisfactory cross-linking agent for I. The copolymerization was accompanied by a gel-effect which determined the reaction kinetics above 60% of conversion. The cross-links between the molecules of I consisted of comparatively long chains of polymethylmethacrylate.

L 27332-66

ACC NR: AP6008967

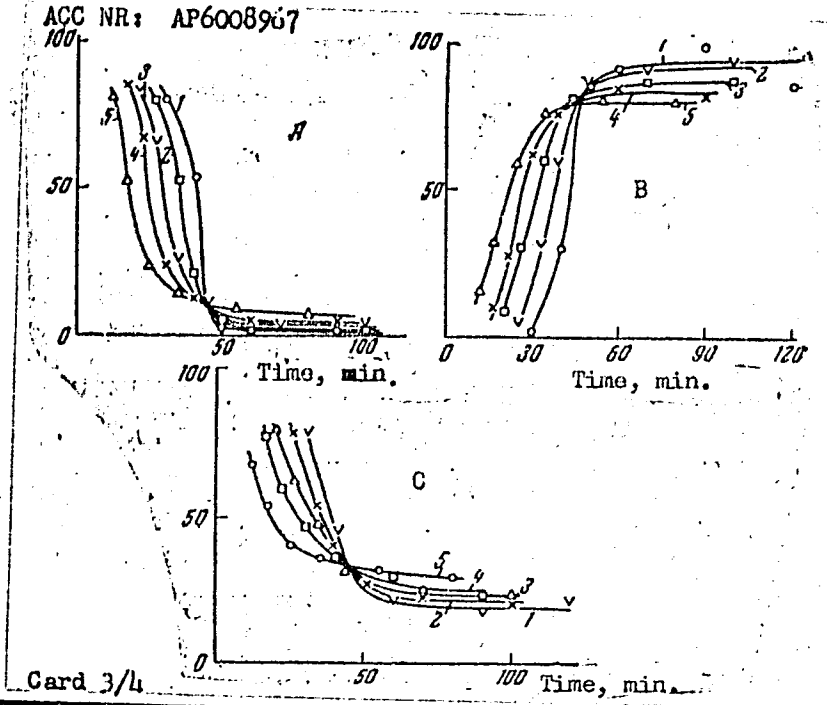


Fig. 1. Copolymerization of I with II at 70C in the presence of 0.5% of benzoyl peroxide. A - change of II concentration in the reaction mixture (ordinate: % unreacted monomer); B - change of the yield of insoluble (cross-linked) copolymer (ordinate); C - change of concentration of residual double bonds in copolymer (ordinate). Polyarylate: monomer weight ratio: 1 - 1:2; 2 - 1:1.8; 3 - 1:1.65; 4 - 1:1.5; 5 - 1:1.

Card 3/4

L 27332-66

ACC NR: AP6008967

Orig. art. has: 1 table, 1 figure, and 1 formula.

SUB CODE: 07,11/SUBM DATE: 07Dec64/ ORIG REF: 004/ OTH REF: 001

Card 4/4

L 27314-66 EWT(m)/EWP(j)/T/ETC(m)-6 IJP(c) DS/WW/RM

ACC NR: AP6008971 SOURCE CODE: UR/0190/65/007/011/1908/1912

AUTHORS: Korshak, V. V.; Rafikov, S. R.; Vinogradova, S. V.; Fomina, Z. Ya. 33 32 13

ORG: Institute for Heteroorganic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR) 15 15

TITLE: Photochemical degradation of polyarylates in solution /78th communication in the series: Heterocyclic polyesters/

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 11, 1965, 1908-1912

TOPIC TAGS: polyarylate plastic, uv absorption, uv irradiation, polyester

ABSTRACT: This investigation was conducted to extend earlier published work by V. V. Rode, A. S. Yarov, and S. R. Rafikov (Vysokomolek. soyed., 6, 2061, 1964) and to study the nature of the molecular changes in polyarylates which result from uv irradiation of their chloroform and cyclohexanone solutions. The polyarylates investigated were derived from phenolphthalein and chlorenhydrides of terphthalic and isophthalic acids following the procedure of V. V. Korshak, S. V. Vinogradova, and S. N. Salazkin (Vysokomolek. soyed., 4, 339, 1962). The experimental results are presented in graphs and tables (see Fig. 1). It was found that in dilute solutions the principal degradation reaction consists of rupture of the main chain of the polymer, leading to a decrease in the average molecular weight and viscosity of the polymer. At higher concentration, structuration processes predominate. The photodegradation of the

Card 1/2 UDC: 678.01:54+678.674

L 27314-66

ACC NR: AP6008971

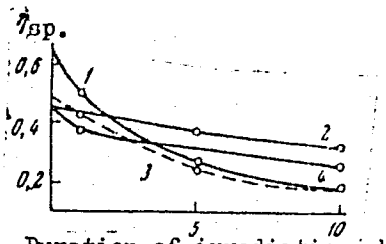


Fig. 1. Change in the specific viscosity during irradiation of 1% solutions of polyarylates in chloroform at 20 ± 2C. 1 - F-2c; 2 - F-2D; 3 - F-2c'; 4 - F2'D. F-2c - polyarylate derived from terephthalic acid; F-2c' - low molecular weight polyarylate; F-2'D - F-2 plus 1.5% chlorinated diphenyl; F-2D - polyarylate derived from isophthalic acid.

polymer is more rapid in cyclohexanone solution than in chloroform solution, and it is sensitized by chlorinated diphenyl. Orig. art. has: 1 table and 5 graphs.

SUB CODE: 11/ SUBM DATE: 09Dec64/ ORIG REF: 003/ OTH REF: 001

Card 2/2

L 36974-66 EWP(1)/EWT(m) RM
ACC NR: AP6008500 SOURCE CODE: UR/0062/66/000/001/0070/0076

AUTHOR: Vinogradova, S. V.; Korshak, V.V.; Valetskiy, P.M.; Mironov, Yu. V. 46 44 B

ORG: Institute of Heteroorganic Compounds, Academy of Sciences, SSSR (Institut elementoorganicheskikh soyedineniy, Akademii nauk SSSR); Moscow Chemical Technology Institute im. D. I. Mendeleyev (Moskovskiy Khimiko-tekhnologicheskiy institut)

TITLE: Heterochain polyesters. Communication 57. Kinetics of the polycondensation of acid chlorides of aromatic dicarboxylic acids with polyhydric aliphatic alcohols

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1966, 70-76

TOPIC TAGS: chemical kinetics, aromatic polycarboxylic acid, aliphatic alcohol, polycondensation, carboxylic acid chloride, HYDROGEN CHLORIDE

ABSTRACT: The kinetics of the polycondensation of the acid chlorides of terephthalic and isophthalic acids with trimethylolethane and trimethylolpropane are investigated with respect to the evolution of hydrogen chloride during the reaction. Polycondensation is carried out in a dowtherm medium in a stream of dry oxygen-free nitrogen whose delivery rate was controlled by a flow meter. The kinetics of polycondensation are studied in the temperature range of 110–150C. In all experiments the quantity of the initial substances and their concentrations are rigorously constant and the ratio is eqimolar. The hydrogen chloride is

Card 1/2 UDC: 531.1+542.952+547.58

absorped in two parallel-connected systems, each of which consists of four traps filled with a 0.5 N solution of NaOH. After absorption the alkaline solutions are titrated with 1 N solution of H_2SO_4. The data obtained from the investigation gave grounds to assume that the surfaces of the mixed polyarylates obtained on the basis of diatomic phenols and polyhydric aliphatic alcohols should be performed in two stages. The first stage is the polycondensation of diatomic phenol with the acid chloride of the dicarboxylic acid which would be carried out at elevated temperatures (up to 220C). The second stage (after all the initial diatomic phenol had entered into the reaction) is the polycondensation of the polyarylate formed with the aliphatic polyhydric alcohol. This stage of the process must be accomplished at lower temperatures (110–130C) which permits achieving a sufficiently high degree of completeness of the reaction without premature hardening of the product formed.

In conclusion, the authors express their gratitude to associates of the Laboratory of VNII of Petroleum Chemistry (laboratoriya VNIINeftekhima), headed by Comrade D. M. Rudkovskiy, for making available the trimethylolethane and the trimethylolpropane. Orig. art. has: 2 tables and 3 figures.

SUB CODE:07/ SUBM DATE: 28Aug63/ ORIG REF: 002/ OTH REF: 003

L 47003-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6027283 (A) SOURCE CODE: UR/0191/66/000/008/0056/0058

AUTHOR: Korshak, V. V.; Slonimskiy, G. L.; Vinogradova, S. V.; Gribova, I. A.; Askadskiy, A. A.; Krasnov, A. P.; Chumayevskaya, A. N.; Moldabayeva, M. K. 43 B

ORG: none

TITLE: Effect of fillers on the properties of compositions based on heat-resistant polymers 15

SOURCE: Plasticheskiye massy, no. 8, 1966, 56-58

TOPIC TAGS: filler, polymer physical property, impact strength, hardness

ABSTRACT: The effect of fillers (powdered copper and aluminum, talc, quartz, graphite and boron nitride added in amounts of 20, 40, 60, 80 and 90 wt. %) on the specific impact strength and hardness of compositions based on F-1 polyarylate (prepared from phenolphthalein and isophthalic acid) and FF-40 phenolphthalein-formaldehyde resin was studied. The compositions based on F-1 showed a decrease in impact strength with increasing content of all fillers, probably because the filler particles hinder the development of fibrillar superstructures and make the polymer structure inhomogeneous, thus impairing its properties. The specific impact strength of specimens based on FF-40 was higher for all fillers than that of the original specimens, the metal powders having a greater effect than the mineral fillers. The hardness curves for F-1 showed maxima in the case of the metal powders, quartz, and boron nitride; the existence of

Card 1/2

UDC: 678.6.01:536.495]:678.046.2/.3

L 47008-66
ACC NR: AP6027283

these maxima is explained. Talc did not increase the hardness of F-1 in any amount. The hardness of FF-40 was greater for all fillers than that of F-1 specimens. Orig. art. has: 5 figures.

SUB CODE: 11,IC/ORIG REF: 002

Card 2/2 vmb

L 01013-67 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6019543 (A) SOURCE CODE: UR/0190/66/008/005/1080/1084

40
39
B

AUTHOR: Korshak, V. V.; Vinogradova, S. V.; Kul'chitskiy, V. I.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR); Moscow Institute of Chemical Technology im. D. I. Mendeleev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Copolymers of the unsaturated polyarylates containing allyl side chains with vinyl- and allyl-type monomers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 6, 1966, 1080-1084

TOPIC TAGS: copolymer, solid mechanical property, polyaryl plastic, synthetic material, polymer structure

ABSTRACT: Copolymerization of polyarylates based on isophthalic acid and containing allyl side chains with diallylphthalate, diallylterephthalate, diallylisophthalate, 2-allylphenylmethacrylate, allylmethacrylate, methylmethacrylate, ethylglycol dimethacrylate, bis-ethyleneglicolphthate methacrylate, and styrene was studied. The object of the work was to fill the gap in the pertinent literature. The structures of the copolymers were determined by IR-spectroscopy and elementary analysis. Copolymerization was carried out either in sealed ampoules or in open dishes, using either benzoyl peroxides or a mixture of benzoyl peroxide with tertiary butyl peroxide as ini-

UDC: 66.095.26+678.13+678.674+678.74

Card 1/2

L 01013-67
ACC NR: AP6019543

tiators. The weight ratio of polyarylate to monomer was 1:1 and 1:2. In the case of polymerization with allylic monomers, the reaction mixtures were heated for 3 hours consecutively at 60°, 80°, 120° and 140°C. In the case of polymerization with vinylic monomers, the reaction mixtures were heated for 3 hours consecutively at 60°, 80°, and 90°C. For copolymers prepared in sealed ampoules, the weight loss during aging at 300°C was determined. Specific impact viscosity, specific strength at static bending, and Brinell hardness for copolymers prepared in open dishes in air were determined. Solubility in chloroform, diallylphthalate, methylmethacrylate, and 2-allylphenol were determined for all copolymers. Of all synthesized copolymers, those based on diallylphthalate and diallylisophthalate were found to have superior thermomechanical properties. Orig. art. has: 3 figures, 2 tables.

SUB CODE: 07/ SUBM DATE: 04Jun65/ ORIG REF: 006

awm

Card 2/2

L 01040-67 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6019546 SOURCE CODE: UR/0190/66/008/006/1109/1112

43
B

AUTHOR: Slonimskiy, G. L.; Askadskiy, A. A.; Korshak, V. V.; Vinogradova, S. V.; Gribova, I. A.; Chumayevskaya, A. N.; Krasnov, A. P.; Moldabayeva, M. K.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Investigation of the relaxation properties of filled polyarylates[15]

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 6, 1966, 1109-1112

TOPIC TAGS: solid mechanical property, polymer rheology, polyaryl plastic, synthetic material, POLYARYLATE, FILLER

ABSTRACT: Relaxation properties of commercial F-1[15] polyarylate filled[15] with copper powder (0-80 wt %) were examined in the 140°-260°C temperature range and in the 50-600 kg/cm^2 load range. The object of the study was to fill the gap in the pertinent literature. The temperature dependence of the relaxation time for F-1 polyarylates with various copper contents is graphed. It was found that in up to 40 wt % copper, the overall activation energy of the relaxation of the copper filled F-1 polyarylate declines (in comparison to the unfilled F-1 polyarylate) with increasing copper content. For the 40-80 wt % copper range, the overall activation energy of relaxation increases with increasing copper content. Changes in the activation energy of relaxation as a

UDC: 678.01:53+678.674

Card 1/2

L 01010-67

ACC NR: AP6019546

0

function of copper content in F-1 polyarylate are graphed. Orig. art. has: 5 figures, 1 formula.

SUB CODE: 07,11/ SUBM DATE: 09Jun65/ ORIG REF: 007

awm

Card 2/2

L 41356-66 EWT(m)/EWP(j)/T IJP(c) KW/RM

ACC NR: AP6025621 SOURCE CODE: UR/0413/66/000/013/0077/0077

28
B

AUTHORS: Vinogradova, S. V.; Korshak, V. V.; Vygodskiy, Ya. S.

ORG: none

TITLE: Preparative method for polyimides. Class 39, No. 183383

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 77

TOPIC TAGS: polyimide resin, heat resistant plastic, nitrogen compound

ABSTRACT: This Author Certificate presents a method for preparing polyimides by reacting aromatic or aliphatic diamines with aromatic tetracarboxylic dianhydrides. To obtain polyimides with high thermal stability, 1,4,5,8-naphthalene-tetracarboxylic dianhydride is used. [04]

SUB CODE: 07/ SUBM DATE: 01Aug63/ ATD PRESS: 5058

Card 1/1 11b UDC: 678.675'7'5

L 40810-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6025623 SOURCE CODE: UR/0413/66/000/013/0077/0078

AUTHORS: Korshak, V. V.; Vinogradova, S. V.; Lebedeva, A. S.; Bulgakova, I. A.

ORG: none

TITLE: Preparative method for polyarylates. Class 39, No. 183386 announced by Institute of Heteroorganic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 77-78

TOPIC TAGS: polyarylate plastic, dicarboxylic acid, polycondensation

ABSTRACT: This Author Certificate presents a method for preparing polyarylates by polycondensation of dicarbonyl chlorides with bisphenols. To broaden the assortment of polyarylates having high thermal stability, either bis(hydroxyphenyl)pyromellitimide or bis(hydroxyphenyl)pyromellitamic acid is used as the bisphenol. [04]

SUB CODE: 07/ SUBM DATE: 05Jul65/ ATD PRESS: 5059

Card 1/1 UDC: 678.673'52'52

L [illegible]5-66 EWT(m)/T/EWP(j) IJP(c) WW/RM
ACC NR: AP6029924 (A) SOURCE CODE: UR/0413/66/000/015/0089/0089

AUTHOR: Vinogradova, S. V.; Korshak, V. V.; Korzeneva, Yu. I.; Alymova, L. A. 29 B

ORG: none

TITLE: Preparative method for unsaturated polyesters. Class 39, No. 184448. 15 [announced by Institute of Heteroorganic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)]

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 89

TOPIC TAGS: polyester resin, unsaturated polyester, heat resistant plastic, chemical resistant plastic

ABSTRACT: An Author Certificate has been issued for a preparative method for unsaturated polyesters involving the polycondensation of unsaturated acids (or anhydrides) with dihydric alcohols. Heat and chemical resistance of the polyesters is improved by using the alcohol which is a reaction product of an alkylene oxide and resorcinol or hydroquinone, such as 1,3- or 1,4-bis[2-hydroxy(propoxy)]benzene. [SM]

SUB CODE: 11/ SUBM DATE: 15/Apr65/ ATD PRESS: 5068

UDC: 678.674.'448'52

1/1

L 03956-67 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6031950 SOURCE CODE: UR/0251/66/043/003/0593/0598

AUTHOR: Papava, G. Sh.; Agladze, L. D.; Tsiskarishvili, P. D.; Vinogradova, S. V.; Korshak, V. V. (Corresponding member AN SSSR)

ORG: Institute of Physical and Organic Chemistry im. P. G. Melikishvili Academy of Sciences GruzSSR (Institut fizicheskoy i organicheskoy khimii, Akademii nauk GruzSSR); Institute of Hetero-Organic Compounds, Academy of Sciences, SSSR (Institut elementoorganicheskikh soyedineniy, Akademiya nauk SSSR)

TITLE: Mixed polyaryl ester-penton block-copolymers

SOURCE: AN GruzSSR. Soobshcheniya, v. 43, no. 3, 1966, 593-598

TOPIC TAGS: block copolymer, polyaryl ester, penton, phenolphthalein, bisphenol A, isophthaloyl chloride, terephthaloyl chloride, polyaryl resin

ABSTRACT: Several mixed polyaryl ester-penton block-copolymers were prepared by polycondensation of various amounts of penton, phenolphthalein and for bisphenol-A, and terephthaloyl and/or isophthaloyl chloride. The copolymers yielded strong films from chloroform solutions. The effects of individual components on the properties of the copolymers were studied. The results, given in the form of tables, indicate that: 1) introduction of up to 10% penton does not substantially lower the softening temperature of polyaryl esters, however, larger amounts of penton lower this temperature; 2) for equal penton content, the softening temperature of the copolymers is affected by the structure of both the bisphenol and the carboxylic acid; 3) intro-

Card 1/2

ACC NR: AP6031950

duction in the copolymer backbone of components with a different structure lowers the softening temperature of the copolymers; 4) small amounts of penton (up to 2.5%) increase the crystallinity of the copolymers, while larger amounts lower this crystallinity and inprove their elasticity. Orig. art. has: 4 tables. [BO]

SUB CODE: 07, 11/ SUBM DATE: 20Nov65/ ORIG REF: 001/

Card 2/2

L 09070-67 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6015663 (A) SOURCE CODE: UR/0413/66/000/009/0074/0074

INVENTOR: Korshak, V. V.; Vinogradova, S. V.; Valetskiy, P. M.; Vasnev, V. A.

ORG: none

TITLE: Method of obtaining polyarylates. Class 39, No. 181283

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 74

TOPIC TAGS: polymer, polyarylate, aromatic ketone, aromatic hydrocarbon

ABSTRACT: An Author Certificate has been issued for a method of obtaining polyarylates. To simplify the technological process in the production of polymers, their spearation and refining are carried out by extraction with organic ketone solvents and aromatic hydrocarbons. [Translation] [NT]

SUB CODE: 11/ SUBM DATE: 14Mar64/

Card 1/1 net UDC: 678.673.025.4

L 10071-67 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AP6029923 (A) SOURCE CODE: UR/0413/66/000/015/0089/0089

INVENTORS: Korshak, V. V.; Vinogradova, S. V.; Valetskiy, P. M.; Salazkin, S. N.; Mironov, Yu. V.

ORG: none

TITLE: Method for obtaining polyesters. Class 39, No. 184447

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 89

TOPIC TAGS: polyester plastic, polyglycol compound, polymer cross linking, polymer, glycol, oligomer

ABSTRACT: This Author Certificate presents a method for obtaining polyesters after the method described in Author Certificate No. 140986. To prevent a premature cross-linking of the polymer and to increase the solubility and fusibility of the latter, the process is carried out in two stages. The first stage consists of the interaction between the chloroanhydrides of dicarboxylic acids and dihydroxy phenols; the second stage is of the reaction of the oligomers, obtained in the first stage, with aromatic (or cycloaliphatic) glycols.

SUB CODE: 07,11/ SUBM DATE: 10Jan64

UDC: 678.673

Card 1/1